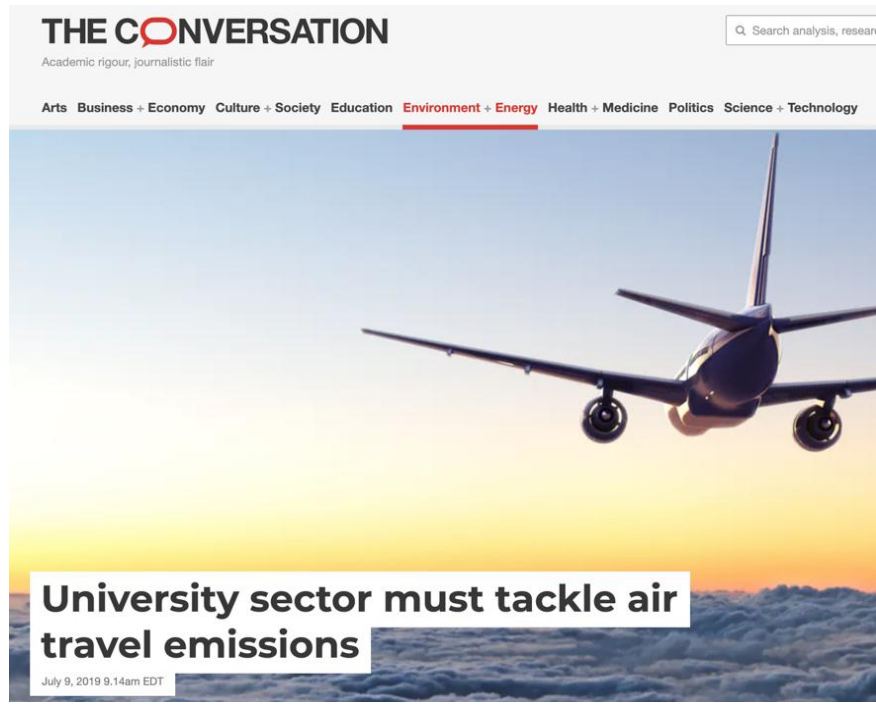
U of T Air Travel Emissions Mitigation Initiative

UNIVERSITY OF TORONTO

U of T Air Travel Mitigation Initiative Framework

Outline for Discussion

- Proposed program: Complimentary initiative stemming from impact of U of T Air Travel Emissions and additional scope 3 opportunities
- Scan of peer activity on air travel mitigation efforts
- Review proposed program framework and executive pilot
  - Types of projects funds will be used for
  - How emission reductions will be verified



Context

- U of T is committed to take action on climate change by advancing greenhouse gas emissions reductions:
  - Implementing our **Low-Carbon Action Plan (2019-2024)** on all three campuses
  - Utilities Master Plan being developed to put **U of T on a path to be a net zero** carbon university by 2050

- Universities are increasingly **under pressure to address Scope 3 emissions**, particularly air travel

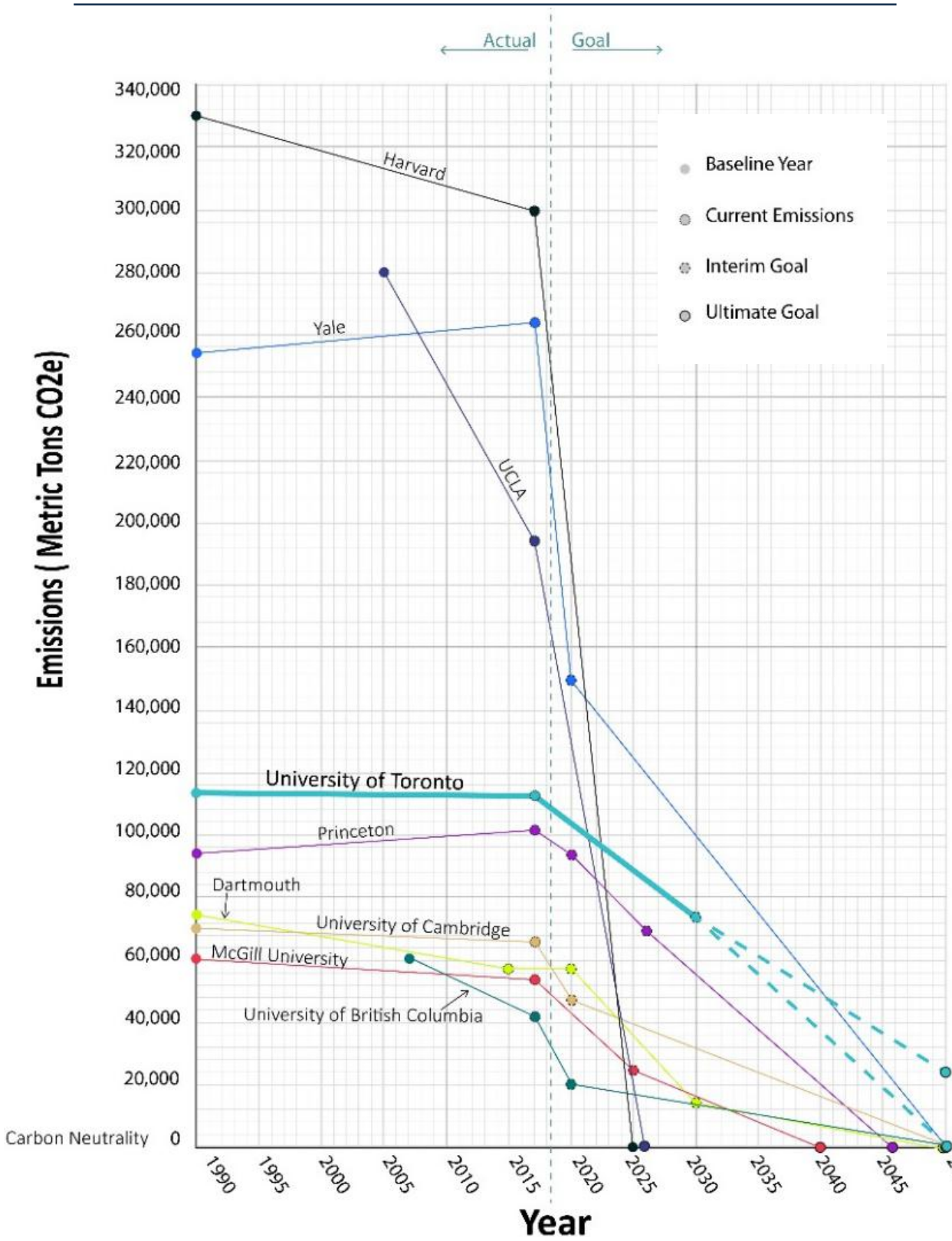
- Three-pronged approach developed to address air travel emissions:

1. Facilitate no travel alternatives

2. Encourage low-carbon and economy travel options; reduce unnecessary group air-travel

3. Mitigate emissions for unavoidable travel

What Our Peers Are Doing



University	Campus Carbon Targets
University of Toronto	37% by 2030 (relative to 1990)
	2050 goal to be defined
McGill University	58% by 2025 relative to 1990
	Carbon Neutral by 2040
University of British Columbia	67% by 2020 (relative to 2007)
	Net Carbon Positive by 2050
University of Cambridge	34% by 2020 (relative to 2005)
	Carbon Neutral by 2050
Harvard	Fossil Fuel neutral by 2026
	Fossil Fuel zero by 2050
UCLA	Reach 1990 emission levels by 2020
	Carbon Neutral by 2025
Yale	43% by 2020 relative to 2005
	Carbon Neutral by 2050
Princeton	Reach 1990 emission levels by 2020
	37% by 2026 relative to 1990
	Net Zero Carbon by 2046
Dartmouth	25% by 2020 relative to 2010
	50% by 2025 relative to 2010
	80% by 2030 relative to 2010
	Carbon Neutral by 2050
	Carbon Negative by 2051
Cornell	50% by 2025 relative to 2008
	Carbon Neutral by 2035
Stanford	80% carbon free by 2030
UPenn	Carbon Neutral by 2042
Columbia University	35% by 2020 relative to 2006
	80% by 2050 relative to 2006
NYU	50% by 2025 relative to 2007
	Carbon Neutral by 2042
UC Berkeley	Carbon Neutral by 2025

80% reduction by 2050

100% reduction by 2050

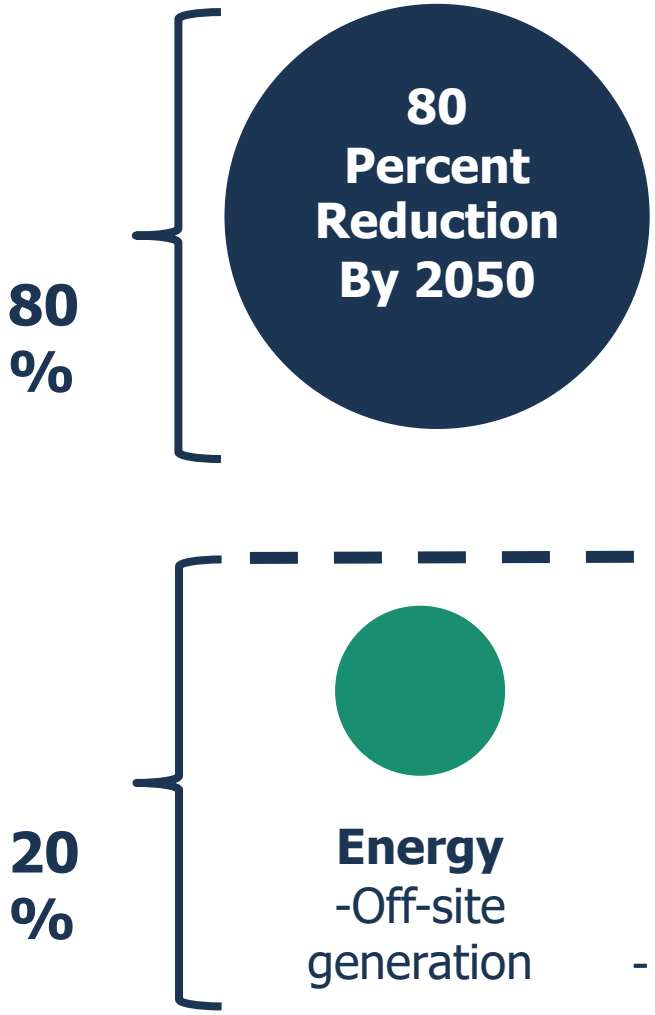
What Our Peers Are Doing: University Benchmarking

- Each university has adopted its own definition of Carbon Neutrality which may make it easier for some to reach their goals.

	Harvard	Cornell	Dartmouth	McGill	U of British Columbia	U of Cambridge	UCLA
Scope 1 • GHG emission reduction	●	●	●	●	●	●	●
Scope 2 • Offsite renewable energy	●	●	●	●	●	●	●
Scope 3 • Reducing indirect emissions				●			●
Carbon Neutrality includes: • Carbon sequestration • Carbon offsets	●	●	●	●	●	●	●

Carbon Neutrality @ UofT

Carbon Neutrality



Target carbon neutrality by 2050, with:

- 80% reduction in absolute emissions
- 20% offsite renewable energy or offsets owned by the University

Target is in line with peer institutions, City of Toronto, and Federal Government

What are our Peers doing?

Summary of activities by peer institutions:

- Most begin with fee structure for university-related associated air travel, with contributions towards a green fund for GHG reduction projects

- Do not market as a true carbon offset to avoid challenges of additionality. Example: UCLA has set a mandated carbon price for domestic ($9 USD) and international ($25 USD) flights to develop a green fund that will address emissions reductions on campus

- Often adopt a '**carbon accounting practice**' if they are not selling offsets externally (i.e. verified offsets vs. certified offsets)

What are our Peers doing? Examples:

- Duke Carbon Offset Initiative
  - Projects range from energy-to-waste to tree planting and energy education

Carbon Offset Projects

Loyd Ray Farms

Loyd Ray Farms is an innovative waste-to-energy project that collects methane generated by the decomposition of hog waste and burns it to generate electricity. Destroying methane in this manner creates carbon credits that Duke will use to offset some of its greenhouse gas emissions on campus. Learn more...

Urban Forestry

The Duke Carbon Offsets Initiative (DCOI) has collaborated with universities, municipalities, and organizations around the United States to plant trees in urban areas and generate carbon offsets. The DCOI has developed a carbon offset protocol that serves as a guide for project development, which is specifically tailored to smaller, urban tree plantings. Learn more...

Energy Efficiency Workshop

The DCOI has developed a home energy efficiency training program designed to benefit members of the Duke community and folks throughout North Carolina by helping them make their homes more energy efficient. Attendees leave the workshop with an action plan based on personal circumstances, strengths, and interests. In the weeks after the workshop, we follow up to encourage participants to carry out their plan. Learn more...

Carbon 'Offset' Program Considerations

- Range of air travel mitigation/carbon offset efforts across universities
- **Defining attributes** include:
  - **Internally** vs. Externally
  - **Mandated** vs. Voluntary
  - Flat rate vs **Tiered rate**
  - Certified vs. **Verified**
  - **Additionality is a challenge**
  - Emissions ownership and level of **control in project selection** allocation of funding: on-campus, local community, global community

U of T Air Travel Emission Mitigation Framework

Carbon Mitigation for U of T related air travel:

- Executive Pilot in 2020
- Rate based on travel zones

Project Principles

- U of T owned asset
- Must avoid or capture GHGs

Projects **evaluated** by Tri-campus Sustainability Committee

Potential Projects:

- Electrification of fleet
- On-site Waste to Fuel
- Active forest & land management

Validation

- Leverage current third party emissions verification process
- Annual Program Report
- Transparency & accountability with all stakeholders on validation approach & outcomes

Proposed Pilot:

- The Sustainability Office, in conjunction with the CECCS, has developed an **Air Travel Mitigation Program** to tackle our air travel emissions

- The Pilot:

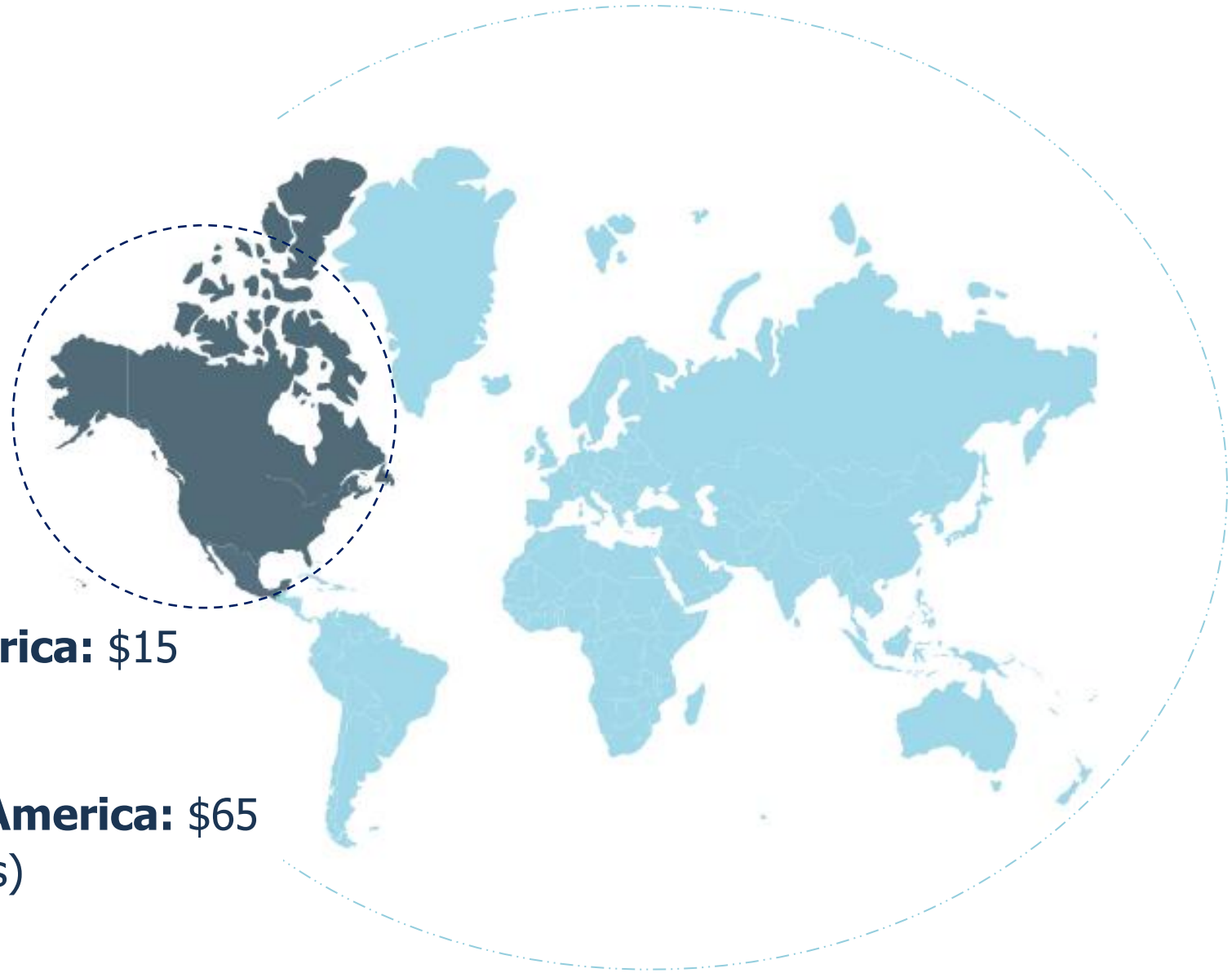
  - **What**: All university funded and related travel

  - **Who:** All air travel by the President, Vice-Presidents, Assistant Vice Presidents, and Deans, and other senior leadership in their offices including senior administrative staff and all Vice-Provosts, Vice-Deans, and Associate Deans

  - **How:**
    - Rate applied is based on two travel zones for round-trip flights
    - Quarterly reporting done by respective offices to Sustainability Office
    - Tri-Campus Sustainability Committee will provide oversite and annual reporting

Proposed Pilot:

- Rates were established by reviewing available travel data
- Methodology and rates are in line with peer institutions

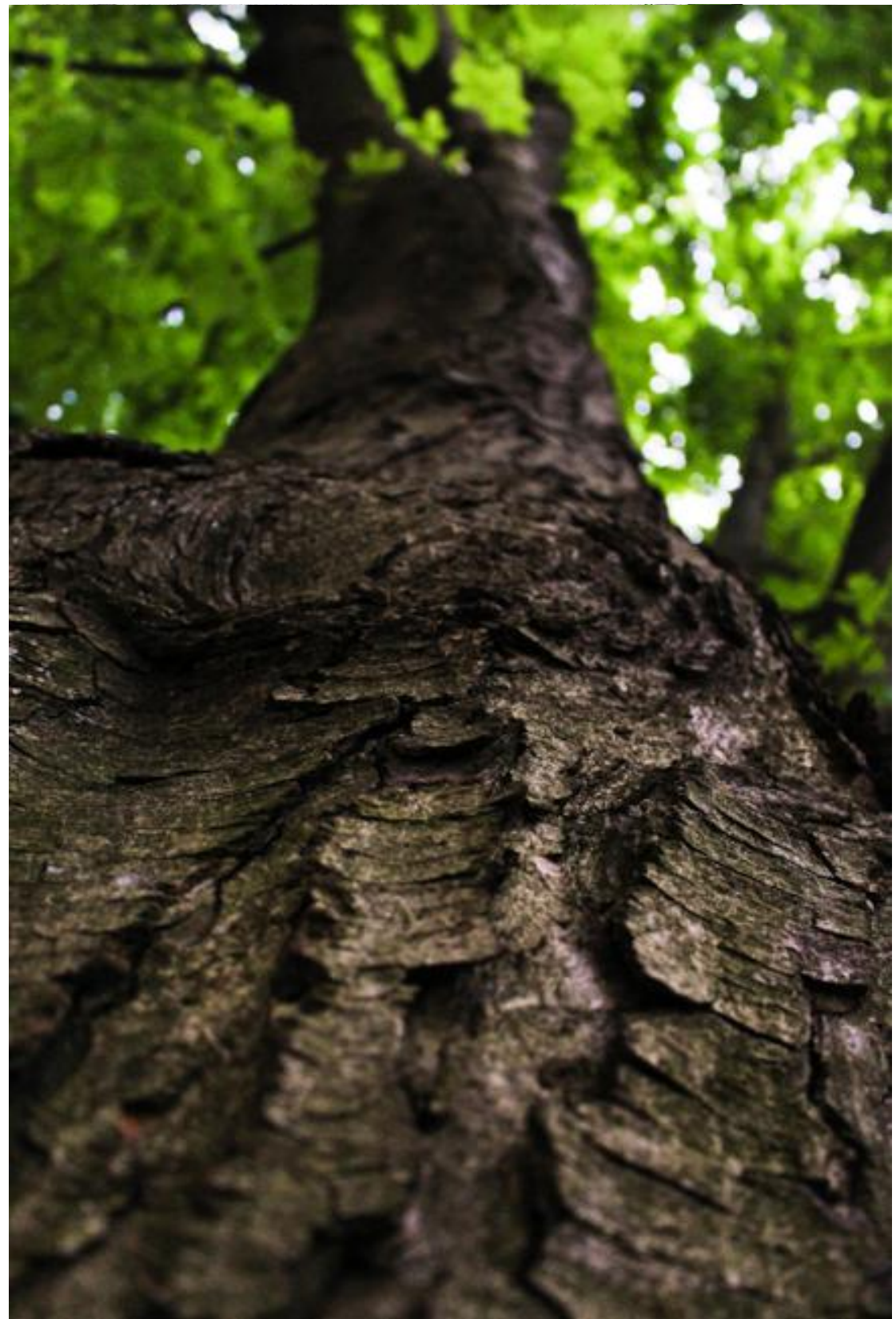


Within North America: $15
($30 Business Class)

Outside of North America: $65
($130 Business Class)

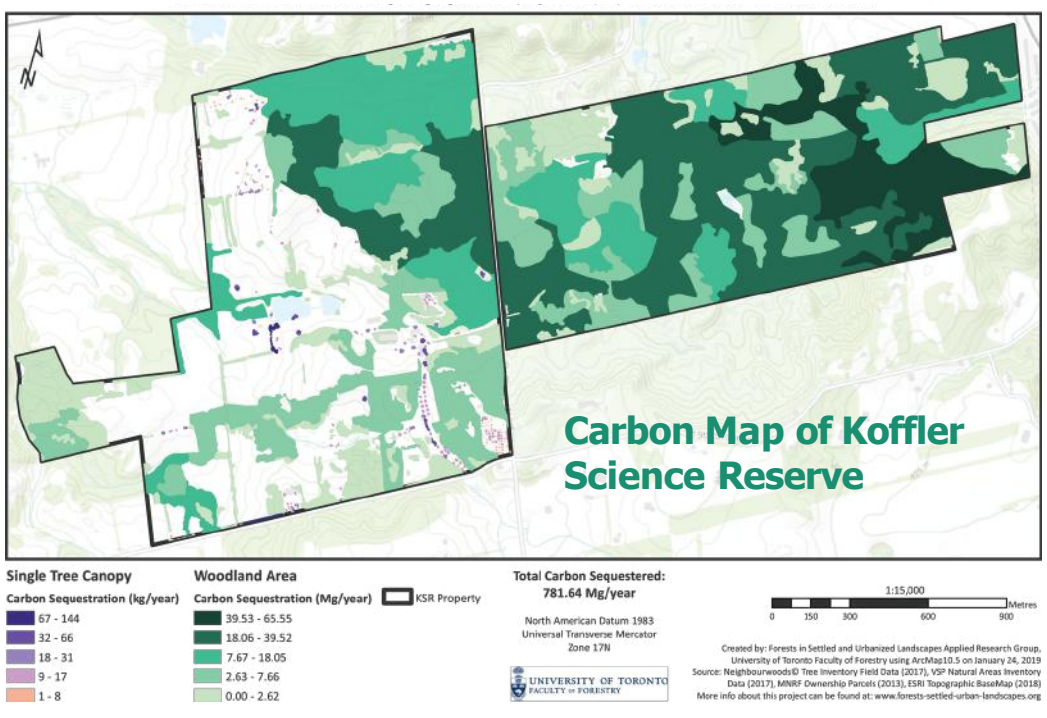
Example: U of T Trees

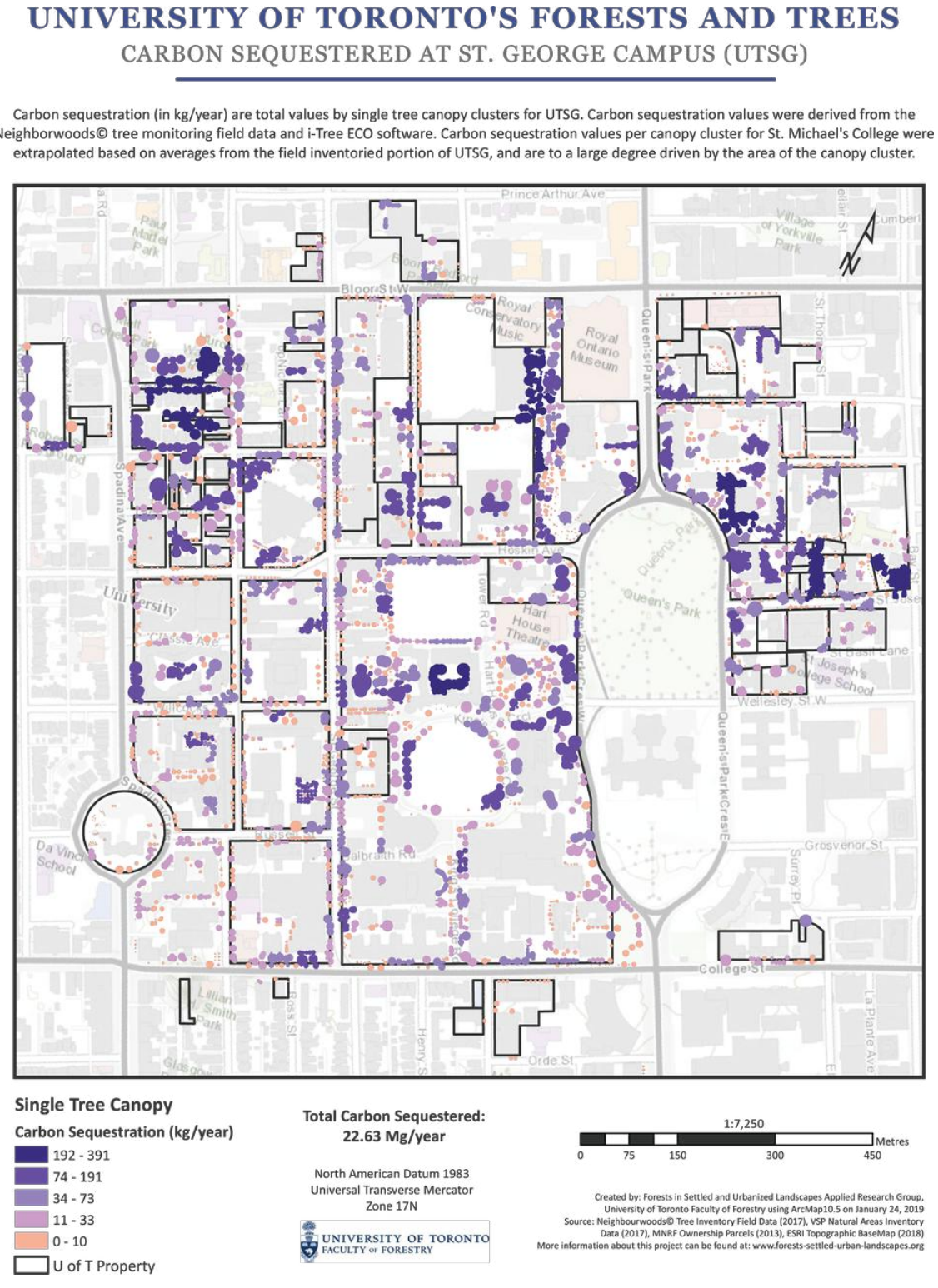
- Opportunity to expand active forest management and experiential learning with U of T Forestry students
- Carbon capture program to mitigate emissions associated with university air travel
- Benefits: promotes human well-being, ecosystem services, air purification, biodiversity, resilience, reduces sound and urban heat island effects



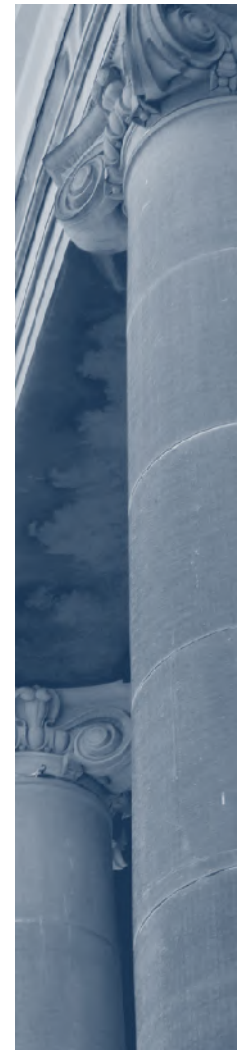
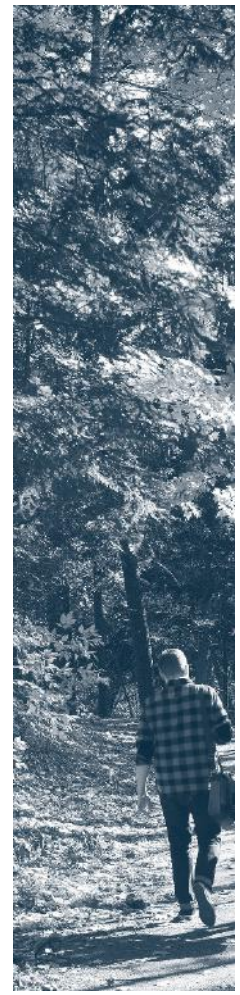
Example: U of T Trees

- U of T properties, including, St. George, UTM, UTSC, Hart House Farm, Koffler Scientific Reserve at Jokers Hill, and Gull Lake, have a significant number of forests and trees that have been capturing and storing carbon for decades
- U of T forestry researchers calculated that trees on all U of T properties continue to capture an additional 5,260 tonnes of CO_2 annually and are working with Operations to advance carbon capture and sequestration







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IT'S GREENER HERE